

REMARKS

Reconsideration of the above-identified application in view of the amendments above and the remarks following is respectfully requested.

Claims 5 and 10-27 are now pending in this Application. Claim 5 has been amended as discussed herein below. Claims 22, 24, and 26-27 have been cancelled without prejudice. New claim 28 has been added.

Claim Rejections - 35 USC § 101

In section 3 of the instant Office Action, the Examiner argues claims 26 and 27 are directed to an invention that is independent or distinct from the invention originally claimed. In order to expedite the Examination process, and without prejudice, Applicants cancelled claims 26 and 27. Accordingly, Applicants believe that this rejection is moot.

35 U.S.C. § 112 Rejection

In sections 4 and 5 of the instant Office Action, the Examiner argues that claim 22 appears to be redundant of claim 5, and should be cancelled. Applicants thank the Examiner for the helpful remark and accordingly cancel claim 22. In the light of this change, Applicants believe that this rejection is moot.

35 U.S.C. § 102 Rejections

In section 6 of the instant Office Action, the Examiner rejected claims 5, 10-21, and 23-25 under 35 U.S.C. § 102(b) as being anticipated by Zipes, U.S. Patent No. 4,384,585 (hereinafter: "*Zipes*"). Claims 22 and 24 have been cancelled without prejudice. New claim 28 has been added. A basis for new claim 28 is described, *inter alia*, in page 33, lines 20-29, and page 35, lines 1-20.

In order to clarify the scope of the claimed invention according to the differences between *Zipes* and the present invention, Applicants have amended independent claim 5, emphasizing the distinctiveness of the claimed invention in the light of *Zipes*. In the light of

these amendments, Applicants believe the Examiner rejection in section 6 of the Office Action in section is moot.

In particular, Amended claim 5 now recites:

"Heart control apparatus, comprising:

a circuitry for generating a non-excitatory stimulus, and;

a sensor which measures a physiological activity (A);

a memory which stores a desired activation profile of a non-arrhythmic heart (B);

a controller which estimates a non-arrhythmic current profile based on said physiological activity and determines a desired electrification pattern according to said non-arrhythmic current profile and said desired activation profile (C); and

stimulus application devices for applying to a heart or to a portion thereof said non-excitatory stimulus according to said desired electrification pattern (C); and,

wherein said circuitry for generating a non-excitatory stimulus generates a stimulus which is unable to generate a propagating action potential, configured for applying

a first non-excitatory stimulus (D) to a first portion of the heart, said first stimulus having a first local effect on the biomechanical behavior of the first portion of the heart, and

a second stimulus to a second portion of the heart, said second stimulus having a second local effect on the biomechanical behavior of the second portion of the heart, said first and second local effects being different from each other" (Symbols (A)-(D) have been added by the Applicants).

Basis for limitation (A) can be found, *inter alia*, in FIG. 4A and related description, for example, in page 41, lines 7-22, and page 43, lines 10-25. Basis for limitation (B) can be found, *inter alia*, in page 29, lines 27-37. Basis for limitation (C) can be found, *inter alia*, in FIG. 4A and related description, for example, in page 43, lines 25-35, in page 29, lines 27-37, and in page 44, lines 9-26. Basis for limitation (D) can be found, *inter alia*, in FIG. 4A and related description, for example, in page 32, lines 14-20, and page 49, lines 30-36.

Zipes describes an implantable medical device which delivers cardioverting energy to cardiac tissue in synchrony with detected ventricular depolarizations, see *Zipes* Abstract. In

Zapis, the cardioverting energy is delivered in response to the detection of tachyarrhythmia, see column 4, lines 24-37. Applicants submit that *Zipes* may teach a device that applies stimulus in a number of areas, as recited in the claimed invention. However, as *Zipes*'s device is designed to treat tachyarrhythmia, it does not teach or imply any detection mechanism and/or method which are based on properties of a non arrhythmic heart. Thus, it is clear that *Zipes* does not teach or imply a memory which stores a desired activation profile of a non-arrhythmic heart, as explicitly recited in limitation (B) and/or a controller that determines a desired electrification pattern according to such a desired activation profile, as explicitly recited in limitation (C).

In section 7 of the instant Office Action, the Examiner rejected claims 5, 10, 11, 13-21 and 23-25 under 35 U.S.C. §102(b) as being anticipated by *Prystowsky*, U.S. Patent No. 4,554,922 (hereinafter: "*Prystowsky*"). Claim 24 has been canceled without prejudice.

As described above, Applicants have amended independent claim 5. Applicants believe that these amendments emphasize the distinctiveness of the claimed invention in the light of *Prystowsky* and that, therefore, the Examiner's rejection in section 7 of the instant Office Action is moot.

In particular, *Prystowsky* describes a pacemaker and a method of inhibiting a variety of cardiac arrhythmias, including atrial and ventricular tachycardia and fibrillation. Applicants submit that *Prystowsky* teaches a device that applies stimulus in a number of areas, as recited in the claimed invention and suggested by the Examiner. However, as *Prystowsky*'s device is designed to treat cardiac arrhythmias, it does not teach or imply any detection mechanism and/or method which are based on properties of a non arrhythmic heart. Thus, it is clear that *Prystowsky*, similarly to *Zipes*, does not teach or imply a memory which stores a desired activation profile of a non arrhythmic heart, as explicitly recited in limitation (B) and/or a controller that determines a desired electrification pattern according to such a desired activation profile, as explicitly recited in limitation (C).

It should be noted that, both references are related to arrhythmic heart treatments. They do not teach or imply any procedure or device that is related to non-arrhythmic heart treatments. Therefore, it is clear that none of the cited references, or any combination thereof, does not teach or suggest a heart control apparatus which is activated based on a desired activation profile of a non-arrhythmic heart as recited in amended claim 5.

Based on the above, Applicants assert that the amended claims 1 and 26 are allowable main claims and that dependent claims 5, 10-21, 23-25, and 28 are consequently allowable as being dependent on an allowable main claim.

35 U.S.C. § 103 Rejections

The Examiner rejected claim 12 under 35 U.S.C. §103(a) as being unpatentable over *Prystowsky* in view of *Zipes*.

As described above, Applicants assert that amended claim 5 is an allowable main claim. Thus, dependent claim 12 is consequently allowable as being dependent on an allowable main claim.

Applicants also note that one of the art would not be motivated to combine *Zipes* and *Prystowsky*, at least for the reason that each art appears to be self-sufficient with regard to a substantially same desired effect, while if multiple fields are combined, the effect would not be predictable according to the teaching of the art.

It is believed that all the points raised by the examiner have been responded to and a notice of allowance is respectfully awaited.

Respectfully submitted,
/William H. Dippert/
William H. Dippert
Reg. No. 26,723
Attorney for Applicants
Phone: 914-286-2813 (Direct)

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Eckert Seamans Cherin & Mellott, LLC
10 Bank Street
White Plains, New York 10606

Phone: 914-949-2909
Fax: 914-949-5424